Practice: 422 - Hedgerow Planting

Scenario: #1 - Pollinator Habitat

Scenario Description:

Where pollinator habitat is an additional wildlife habitat concern this scenario addresses the resource concern of inadequate fish and wildlife habitat. It provides both physical habitat by providing areas that are not disturbed by annual tillage and provides pollen and nector throughout the growing season by establishing a diverse mixture of flowering plants. Typically a mixture of 5 or more species is planted to improve diversity so that pollen and nector are avaiable as long as possible. Typical installation is in or at the edge of cropland or pasture. Typical installation involves tillage to prepare the site for planting. Flowering trees and shrubs adapted for local climatic and edaphic conditions are typically planted at eight foot intervals (this will vary with species selection and density goals). A native grass adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. A locally adapted mixture of at 3 pollen and nectar producing plants will be drilled into the site. The species list in the component section of this scenario are strictly for deriving a cost. Species adapted to local climatic and edaphic conditions will be listed in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Pollen and nector sources are lacking or are only availble for part of the growing season. Large cropland tracks lack undisturbed areas for ground nesting bees

After Situation:

Flowering plants supply pollen and nector throughout the growing season. Undisturbed areas provide nesting sites for bees and other native pollinators.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Feet

Scenario Typical Size: 800

Scenario Cost: $2,812.31 **Scenario Cost/Unit:** $3.52

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.14	0.25	$4.04
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$20.76	0.25	$5.19
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$24.48	100	$2,448.00
Materials						
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.00
Tree, conifer, seedling, containerized, 15 cu. in.	1520	Containerized conifer stock, 15 cubic inches (e.g. 2.0" x 6"). Includes materials and shipping only.	Each	$0.60	100	$60.00
Three Species Mix, Native Forb	2333	Native forb mix. Includes material and shipping only.	Acre	$586.90	0.4	$234.76
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$33.30	0.25	$8.33

Practice: 422 - Hedgerow Planting

Scenario: #2 - Contour

Scenario Description:

Typically installation of this scenario is within an annually cropped field. The hedge row is planted on the contour to provide a physical and visual aid to contour farming. This scenario is used to facilitate additional measures that address the resource concerns of; sheet and rill soil erosion and Water Quality Degradation, excess sediment in surface waters. Trees, shrubs, and grasses adapted for local climatic and edaphic conditions are typically planted at eight foot intervals (this will vary with species selection and density goals). Species selected should be at least three feet tall at maturity. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Contour farming practices are made difficult or less effective due to a lack of visual clues as to the location of the contours. Soil is lost to sheet and rill erosion. Sediments are deposited into surface waters.

After Situation:

Hedgerow planted on the contour presents a physical and visual guide for tillage and planting operations on the contour. Soil erosion from sheet and rill sources is reduced and the resultant deposition of sediment to surface waters is in turn reduced.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Feet

Scenario Typical Size: 800

Scenario Cost: $2,978.18 **Scenario Cost/Unit:** $3.72

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$20.76	0.25	$5.19
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.14	0.25	$4.04
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$24.48	100	$2,448.00
Materials						
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	$46.58	0.4	$18.63
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$33.30	0.25	$8.33
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.00
Tree, conifer, seedling or transplant, potted, 1/2 to 1 gal.	1536	Potted conifer, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.42	100	$442.00

Practice: 422 - Hedgerow Planting

Scenario: #4 - Wildlife, Warm Season Grass

Scenario Description:

Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants.Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight foot intervals (this will vary with species selection and density goals). A mix of 2 native warm season grasses adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation:

Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made availble by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Feet

Scenario Typical Size: 800

Scenario Cost: $2,997.38 **Scenario Cost/Unit:** $3.75

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.14	0.25	$4.04
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$20.76	0.25	$5.19
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$24.48	100	$2,448.00
Materials						
Two Species Mix, Warm Season, Native Perennial Grass	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	$94.57	0.4	$37.83
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$33.30	0.25	$8.33
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.00
Tree, conifer, seedling or transplant, potted, 1/2 to 1 gal.	1536	Potted conifer, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.42	100	$442.00

Practice: 422 - Hedgerow Planting

Scenario: #6 - Wildlife Cool Season

Scenario Description:

Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants.Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight foot intervals (this will vary with species selection and density goals). A native cool season grass adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation:

Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made availble by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Feet

Scenario Typical Size: 800

Scenario Cost: $3,233.31 **Scenario Cost/Unit:** $4.04

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$20.76	0.25	$5.19
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.14	0.25	$4.04
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$24.48	100	$2,448.00
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$33.30	0.25	$8.33
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.00
Shrub, seedling or transplant, potted, 1/2 to 1 gal.	1526	Potted shrub, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.81	100	$481.00
Three Species Mix, Native Forb	2333	Native forb mix. Includes material and shipping only.	Acre	$586.90	0.4	$234.76

Practice: 422 - Hedgerow Planting

Scenario: #7 - Hedgerow Existing Understory

Scenario Description:

Typically installed in or at the edge of cropland or pasture where there is existing vegetation such as grasses or forbes. Trees and shrubs are planted directly into the grass/forb area. this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants.Typical installation iis a 30 foot wide hedgerow with four line of trees or shrubs planted 10 feet apart. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Wildlife food amy be limited.

After Situation:

Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made availble by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 800

Scenario Cost: $1,342.08 **Scenario Cost/Unit:** $1.68

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$24.48	16	$391.68
Materials						
Tree shelter, solid tube type, 4" x 18"	1562	4" x 18" tree tube for protection from animal damage. Materials only.	Each	$1.13	160	$180.80
Shrub, seedling or transplant, potted, 1/2 to 1 gal.	1526	Potted shrub, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.81	160	$769.60

Practice: 422 - Hedgerow Planting

Scenario: #8 - Urban Suburban Hedgerow

Scenario Description:

Typically installed in or at the edge of cropland in an urban or suburban setting this scenario is used to address a number of resource concerns including: Inadequate Habitat for Fish and Wildlife resource concern; . Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants. Typical installation will be completed using hand tools such as shovels and rakes. The typical size farm is betweend 0.25-2.0 acres. Typical sixe hedge is 100 feet by 10 feet. Normally 2 lines of shrubs are installed. A mix of 2 native warm season grasses, cool season grasses or native forbes are hand broadcast at the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Urban -Suburban small farm does not have hedgerowa established. Hedgerows are need to provide wildlife habitat, as well as, provide screnning from excessive traffic.

After Situation:

Urban -Suburban small farm have hedgerowa established. Hedgerows provide wildlife habitat, as well as, provide screnning from excessive traffic.

Scenario Feature Measure:

Scenario Unit: Each

Scenario Typical Size: 1

Scenario Cost: $493.41 **Scenario Cost/Unit:** $493.41

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$11.62	4	$46.48
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$24.48	8	$195.84
Materials						
Shrub, seedling or transplant, potted, 1/2 to 1 gal.	1526	Potted shrub, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.81	40	$192.40
Three Species Mix, Native Forb	2333	Native forb mix. Includes material and shipping only.	Acre	$586.90	0.1	$58.69